Amendment to the Claims:

1. (Currently Amended) A method for determining geometrical properties of a structure of an object of interest displayed in an image, comprising the steps of:

(a) ~~adapting~~ generating a deformable surface model ~~to the~~ of a surface of a training object;

(b) ~~applying~~ generating an extended deformable surface model of the training object by associating additional geometrical information to the ~~adapted~~ generated deformable surface model of the training object; [[and]]

(c) adapting the extended deformable surface model to a surface of the object of interest, such that a one-to-one point correspondence is maintained between the extended deformable surface model and the adapted extended deformable surface model;

~~(c) extracting~~ (d) determining the geometrical properties of the structure of the object of interest from the adapted extended deformable surface model ~~to which~~ according to the associated additional geometrical information ~~has been applied.~~; and

(e) extracting at least one measurement of interest of the structure based on the determined geometrical properties.

2. (Currently Amended) The method according to claim 1, wherein step (b) of generating an extended deformable surface model ~~applying additional geometrical information to the adapted deformable surface model of the object~~ further comprises the steps of:

identifying surface elements of the deformable surface model relating to a particular sub-part of the training object; [[and]]

selecting a geometrical primitive having a form corresponding to a form of the particular sub-part; and

fitting [[a]] the geometrical primitive to the surface elements relating to the particular sub-part of the training object in the deformable surface model~~, the geometrical primitive having a form corresponding to a form of the particular sub-part~~.

3. (Currently Amended) The method according to claim 2, wherein ~~the geometrical properties of the object are extracted on the basis of the geometrical primitive~~ the additional geometrical information is associated with each surface element of the extended deformable surface model.

4. (Currently Amended) The method according to claim [[2]]3, wherein ~~the surface elements of the particular sub-part of the object are identified by means of labels assigned to the surface elements belonging to the particular sub-part~~ the additional geometrical information includes a sub-part identification, a selected geometric primitive, and a method for fitting the geometric primitive.

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Currently Amended) An image processing device, comprising:

a memory which stores a ~~deformable model~~ simple training model and an image depicting ~~an object~~ an end sub-part and a shaft sub-part of a bone; and

an image processor which determines geometrical properties of the ~~object~~ of the sub-parts of the bone, wherein the processor is programmed to perform the following operations:

(a) ~~adapting~~ generating a deformable surface model ~~to the~~ of a surface of a training object, the training object being distinct from the bone depiction;

(b) ~~applying~~ generating an extended deformable surface model of the training object by associating additional geometrical information to the ~~adapted~~ generated deformable surface model of the training object; [[and]]

(c) adapting the extended deformable surface model to a surface of the bone, such that a one-to-one point correspondence is maintained between the

extended deformable surface model of the training model and the adapted extended deformable surface model of the bone;

~~(c) extracting~~ (d) determining the geometrical properties of the ~~structure~~ sub-parts of the ~~object~~ bone from the adapted extended deformable surface model ~~to which~~ based on the associated additional geometrical information ~~has been applied.~~; and

(e) extracting at least one measurement of interest of the sub-parts based on the determined geometrical properties.

9. (Currently Amended) A non-transitory computer-readable medium having processor-executable instructions thereon for execution by a processor of an image processing device to control the processor to determine geometrical properties of a structure of an object of interest by performing:

a) ~~adapting~~ generating a deformable surface model ~~to the~~ of a surface of a training object;

(b) ~~applying~~ generating an extended deformable surface model of the training object by associating additional geometrical information to the ~~adapted~~ generated deformable surface model of the training object; [[and]]

(c) adapting the extended deformable surface model to a surface of the object of interest, such that a one-to-one point correspondence is maintained between the extended deformable surface model and the adapted extended deformable surface model;

~~(c) extracting~~ (d) determining the geometrical properties of the structure of the object of interest from the adapted extended deformable surface model ~~to which~~ according to the associated additional geometrical information ~~has been applied.~~; and

(e) extracting at least one measurement of interest of the structure based on the determined geometrical properties.

10. (Currently Amended) A method for determining geometric properties of a subpart of an object of interest, comprising:

(a) with a processor, ~~applying~~ generating a deformable surface model represented by a polygon mesh [[to]] of a surface of a[[n]] training object ~~of interest from an image~~;

(b) with the processor, extending the generated deformable surface model with additional geometrical information;

[[(b)]](c) with the processor, deforming the extended deformable surface model to optimally fit a surface of at least one sub-part of the ~~surface of the~~ object of interest;

[[(c)]](d) with the processor, determining geometrical properties of the object of interest based on the additional geometrical information of the ~~deformable~~ deformed extended surface model fit to the sub-part.

11. (Currently Amended) The method according to claim 10, further including:

labeling elements of the polygon mesh corresponding to the at least one sub-part ~~of interest~~; [[and]]

selecting a geometrical primitive having a form corresponding to a form of the particular sub-part; and

fitting [[a]] the geometric primitive to the labeled elements of the polygon mesh corresponding to each of the at least one sub-part of interest~~; and~~

~~wherein the geometric properties of the object are determined based on the geometric primitive~~.

12. (Currently Amended) The method according to claim 10, wherein the deformable surface model is ~~fit to~~ generated of at least a first and a second sub-part[[s]] of the training object and further including:

identifying elements of the polygon mesh fit to the first sub-part;

identifying elements of the polygon mesh fit to the second sub-part;

fitting a first geometric primitive to the elements of the polygon mesh [[fit]] identified to the first sub-part;

fitting a second geometric primitive to the elements of the polygon mesh [[fit]] identified to the second sub-part; [[and]]

deforming the first and second primitives as part of the deformed extended surface model; and

determining the geometric properties of the object of interest using properties of the first and second deformed geometric primitives of the deformed extended surface model.

13. (Currently Amended) The method according to claim 12, wherein the object of interest is a bone, the first and second sub-parts are an end and a shaft, respectively, of the bone, the first and second geometric primitives are a sphere and a line, respectively, and the geometric property of the object of interest is at least one of a location, an orientation, and/or a center which are derived directly from parameters of the first and second deformed primitives.

14. (Currently Amended) The method according to claim 10, wherein the step of deforming the extended deformable surface model to optimally fit the surface of the at least one sub-part of the object of interest, further includes:

identifying a plurality of surface points of the surface of the sub-part of the object of interest; and

altering the polygon mesh to fit vertices of the polygons mesh to the identified surface points.

15. (Currently Amended) The method according to claim 1, wherein the deformable surface model includes a mesh of triangles and the step (b) of ~~applying additional geometrical information to the~~ generating an extended ~~adapted~~ deformable surface model ~~information~~ includes:

identifying ~~surface elements~~ triangles belonging to sub-parts of the training object;

labeling ~~surface elements~~ triangles belonging to the respective sub-parts of the training object;

selecting a geometric primitive in accordance with a measurement to be carried out and a form of a selected corresponding sub-part;

fitting the geometric primitive to the surface elements [[of]] labeled to the selected corresponding sub-part; [[and]]

determining a rule which defines the selected geometric primitive and a method which fits the selected primitive ~~maps the geometric primitive~~ onto the selected corresponding sub-part; and

labeling each triangle with the determined rule along with the respective sub-part label to generate an extended deformable surface model.

16. (Currently Amended) The method according to claim [[15]]18, wherein the object is a femur and the subparts include a femur head and a femur shaft.

17. (Previously Presented) The method according to claim 16, wherein the geometric primitive fit to the femur head includes a sphere and the geometric primitive fit to the femur shaft includes a straight line.

18. (Currently Amended) The method according to claim 15, wherein ~~the deformable surface model includes a mesh of triangles,~~ each triangle having a normal and the step (c) of adapting the extended deformable surface model ~~further including~~ includes:

[[(d)]] for each triangle, ~~carrying out a~~ searching along a triangle normal to find a point of intersection with the surface of the object of interest;

[[(e)]] formulating an energy function ~~from~~ between the points of ~~interaction~~ intersection and vertices of the triangular mesh;

[[(f)]] minimizing the energy function to define new ~~triangle~~ coordinates for the vertices of the triangular mesh; and

[[(g)]] iteratively repeating the steps ~~(d)-(f)~~ of searching along a triangle normal, formulating an energy function, and minimizing the energy function to generate [[a]] the adapted extended ~~deformed~~ deformable surface model[[;]].

~~(h) measuring geometric properties of the object.~~

19. (Cancelled)

20. (Cancelled)

21. (New) The method according to claim 18, wherein the structure of the object of interest corresponds to the selected corresponding sub-part and the step (d) of determining geometrical properties of the structure of the object of interest includes:

extracting the vertex coordinates of the triangular mesh of the selected corresponding sub-part;

fitting a geometric primitive to the extracted coordinates according to the rule labeled to the respective triangles; and

estimating parameters which define at least one geometrical property of the fitted geometric primitive.

22. (New) The method according to claim 1, wherein the training object and the object of interest are distinct.

23. (New) The method according to claim 2, wherein the one-to-one correspondence ensures that the position of a surface element and the number of surface elements are maintained after adaptation.

24. (New) The image processing device according to claim 8, wherein the bone is a femur, the end sub-part is a femur head, and the shaft sub-part is a femur shaft.

25. (New) An image processing device, comprising:

a processor programmed to perform the method of claim 1; and

a memory which stores the deformable surface model of the training object and an image depicting the object of interest.